

**EXHIBIT C**

## Verification Statement For Translation

I, LEE, Seok-Am, hereby declare that I am conversant in the Korean and the English languages and that I am the translator of the document attached and certify that to the best of my knowledge and belief the following is a true and correct English translation of the specification contained in Korean Patent Application No. 10-2004-0006626.

Signature : Lee . Seok-Am LEE, Seok-Am  
Date : January 20, 2010

## [ABSTRACT OF THE DISCLOSURE]

### [ABSTRACT]

A handover function must be provided in order to provide mobility of a terminal in the IEEE 802.16-based wireless Internet system. IEEE 802.16 working groups provide various methods to support the handover function.

The present invention is applicable to the handover function used by the IEEE 802.16-based wireless Internet system, and it relates to a method for performing handover when a mobile terminal has woken up from an abnormal handover or the sleep mode and communication with an existing serving base station (BS) has dropped.

Regarding the handover provided by IEEE 802.16, handover is requested from an existing serving base station, one target base station (BS) is selected from among a plurality of base stations recommended by the serving base station, network re-entry is then performed. In the drop condition, the mobile terminal selects a random base station as a target base station from among neighboring base stations and performs network re-entry. However, in this case, since the target base station cannot know that the current mobile terminal attempts to perform network re-entry because of drop, it performs not network re-entry but initial entry to thus fail to maintain a service based session.

In the case of network re-entry because of the drop condition, the present invention includes an identifier of a previous serving base station in a (ranging request (RNG-REQ) message that is initially transmitted to the target base station by the mobile terminal to notify the target base station that the mobile terminal is performing network re-entry. When the target base station has

known this fact, it maintains a session by performing handover through exchanging a message with the serving base station through a backbone network.

**[REPRESENTATIVE DRAWING]**

5

**FIG. 5**

**[INDEX]**

Wireless Portable Internet, Handover, Drop, RNG-REQ

[SPECIFICATION]

[TITLE OF THE INVENTION]

HANOVER METHOD IN WIRELESS PORTABLE INTERNET SYSTEM

5 [BRIEF DESCRIPTION OF THE DRAWINGS]

FIG. 1 shows an example of handover in the IEEE 802.16-based wireless Internet system.

FIG. 2 shows an operation of a mobile terminal when a drop is generated in the IEEE 802.16 -based wireless Internet system.

10 FIG. 3 shows an operation of a mobile terminal when a drop is generated according to the present invention.

[DETAILED DESCRIPTION OF THE INVENTION]

[OBJECT OF THE INVENTION]

[FIELD OF THE INVENTION AND PRIOR ARTS OF THE FIELD]

15 The present invention relates to a handover method provided by the IEEE 802.16-based wireless Internet system.

Particularly, the present invention relates to a handover method for supporting no-drop handover in the drop condition in the IEEE 802.16-based wireless Internet system.

20 In the existing handover method proposed by IEEE 802.16, when a mobile terminal requests handover from a serving base station and the serving base station recommends target base stations available for supporting handover, the mobile terminal selects one of the target base stations and moves then. However, the currently proposed method may cause a problem

before normal handover performed is finished or when the mobile terminal moves during the sleep mode and wakes up from the sleep mode but cannot communicate with the serving base station (i.e., a drop case). Regarding the method proposed by IEEE 802.16, when the mobile terminal senses a drop condition, it selects one of the neighboring base stations as a target base station and moves to it to perform network re-entry. However, since the target base station has no information on the corresponding mobile terminal, it fails to perform the network re-entry process and performs initial entry again. In this case, since a radio channel must be set again, the session with the viewpoint of service cannot be maintained.

#### **[PROBLEMS TO BE SOLVED OF THE INVENTION]**

The present invention has been proposed to solve the drawback of the handover scheme proposed by the IEEE 802.16, request handover by the serving base station in a like manner of the currently proposed handover method, and request handover by the target base station in the case of drop.

Technical objects for the present invention will be: 1) A method for performing the handover function in the case of a drop condition as well as the general case will be found. 2) A method for minimizing a length of a radio message will be found so as to efficiently use a radio resource. 3) A method for supporting the function through minimum correction will be found so as to maintain consistency with the existing handover method.

#### **[STRUCTURES OF THE INVENTION]**

FIG. 1 shows an example of handover proposed by IEEE 802.16. In FIG. 1, a mobile terminal (MSS) transmits a HO-REQ (Handover Request)

message to a serving base station to request handover. The serving base station checks whether the neighboring base station can accept the corresponding mobile terminal's handover request, includes a list of at least one target base station available for handover in a HO-RSP (Handover Response) message, and transmits it to the mobile terminal. Upon having received the HO-RSP message, the mobile terminal selects one of the target base stations recommended by the serving base station, notifies the serving base station of it, and attempts to perform network re-entry toward the corresponding target base station.

FIG. 2 shows an operation of a mobile terminal in the case of drop. Before normal handover performance is finished or when having woke up from the sleep mode and communication with the serving base station has been disconnected, the mobile terminal selects a random base station from among neighboring base stations as a target base station, and performs network re-entry. However, since the selected target base station has no information on the corresponding mobile terminal, the mobile terminal cannot perform the network re-entry process. Therefore, the mobile terminal performs initial entry process when it initially enters the network and sets the radio channel again. Therefore, the session with the viewpoint of the service is not maintained and data buffered by the previous serving base station can be lost.

FIG. 3 shows an example of handover according to the present invention. When the mobile terminal senses drop, it selects a random base station from among the neighboring base stations as a target base station, and performs network re-entry. In this instance, the RNG-REQ message that is an

initial message transmitted to the target base station includes an identifier BS ID of a 48 bit length of the previous serving base station. When the RNG-REQ message includes a BS ID, the target base station determines that the mobile terminal attempts to perform network re-entry.

5 In this instance, the target base station uses the included BS ID to request information on the corresponding mobile terminal from the previous serving base station, and uses the information to perform the network re-entry process. Therefore, in this case, the handover is requested by the target base station from the serving base station differing from the general handover case in  
10 which handover is requested by the serving base station from the target base station.

#### **[EFFECT OF THE INVENTION]**

The present invention can provide a seamless mobile service by maintaining the session with the viewpoint of service by controlling a mobile terminal to perform handover through network re-entry in the drop condition.  
15 Also, the present invention uses the initial message transmitted to the base station to provide information on the previous serving base station and exchange terminal information through a backbone network while performing a process requiring no terminal information. Because of it, handover's delay time occurring during the drop condition can be minimized. Further, since the proposed method performs the process proposed by IEEE 802.16 in an almost  
20 like manner, additional cost for application can be reduced.

**[CLIAMS]**

**[Claim 1]**

In applying a method for processing handover that occurs in a drop condition in an IEEE 802.16-based wireless Internet system,

5 a method for requesting handover from a target base station other than a serving base station.

**[Claim 2]**

A method for using a RNG-REQ message that is an initial message transmitted to a target base station in order for the mobile terminal of Claim 1 to  
10 request handover to the target base station.

**[Claim 3]**

A method for including a BS ID of a previous serving base station in a message as a handover request in using the method of Claim 2.

[DRAWINGS]

FIG. 1

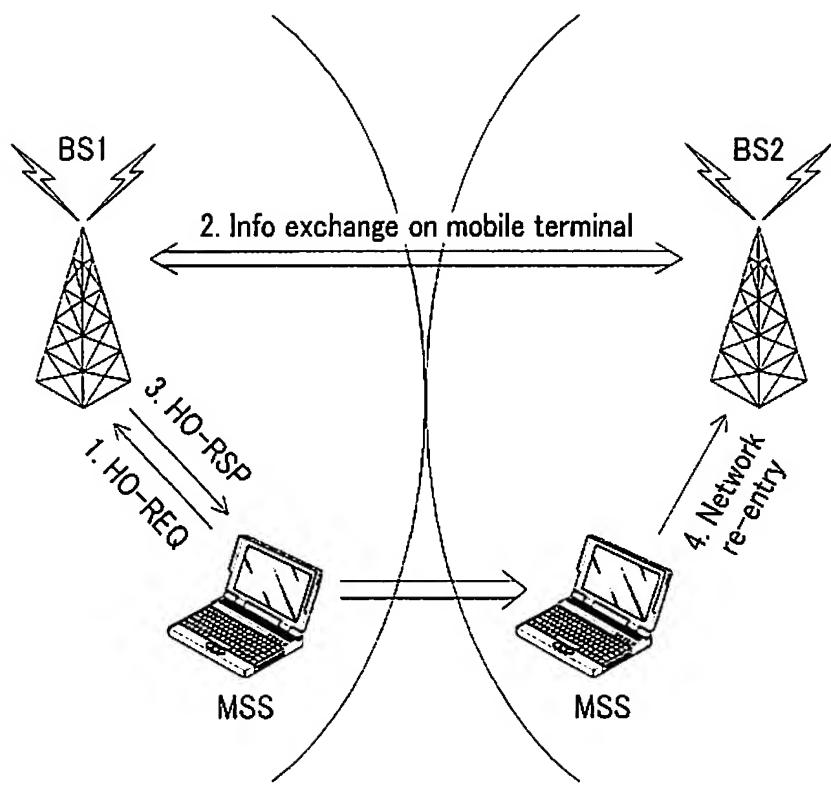


FIG. 2

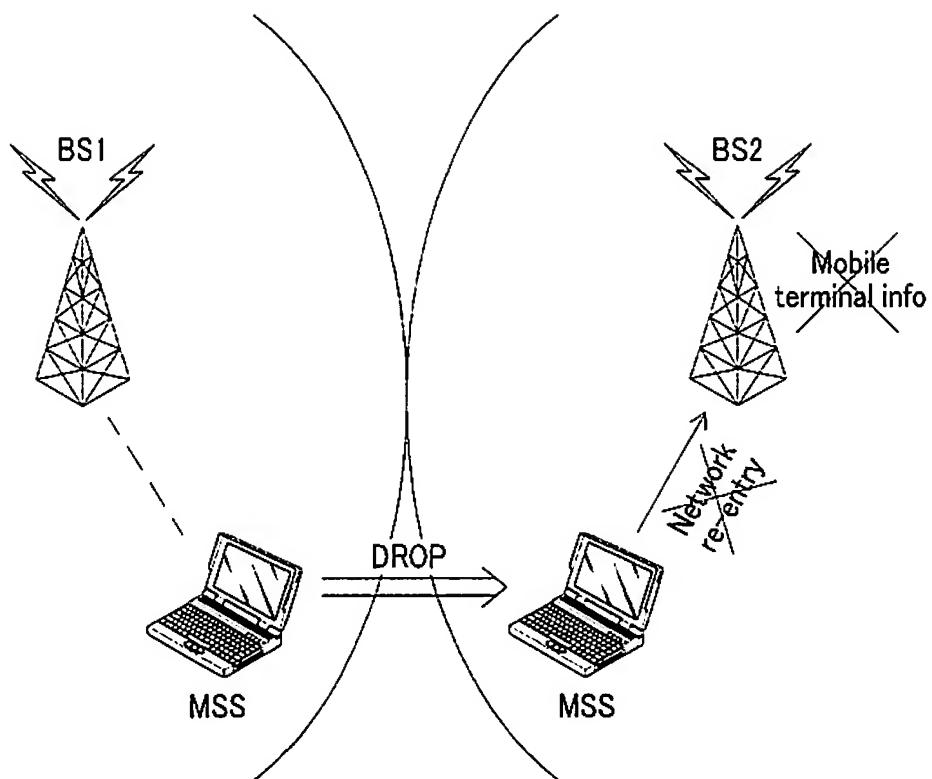


FIG. 3

